AMENDMENTS TO THE CLAIMS

Claims 1-36 (Cancelled)

37. (New) A method of generating cultured mast cells, comprising the steps of:

a) contacting at least one CD34-positive cell with a flt-3 ligand and a stem cell factor to generate a proliferated population of progenitor cells; and thereafter

b) contacting said progenitor cells with said stem cell factor and a cytokine suitable for differentiating the progenitor cells into mast cells, thereby forming a proliferated population of mast cells.

38. (New) The method of claim 37 in which the cytokine is IL-6 and the mast cells are mucosal mast cells.

39. (New) The method of claim 38 in which the IL-6 is human IL-6.

40. (New) The method of claim 37 in which the cytokine is IL-4 and the mast cells are connective tissue-type mast cells.

41. (New) The method of claim 40 in which the IL-4 is a human IL-4.

42. (New) The method of claim 37 in which the flt-3 ligand is human flt-3 ligand.

43. (New) The method of claim 37 in which the stem cell factor is human stem cell factor.

44. (New) The method of claim 37 in which the CD34-positive cell is a human CD34-positive cell.

45. (New) The method of claim 37 in which the CD34-positive cell is obtained from umbilical cord blood.

46. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^7 cells.

47. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^8 cells.

48. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^9 cells.

49. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^{10} cells.

50. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^{11} cells.

51. (New) A population of cultured mast cells prepared by the method of claim 37.

52. (New) The population of cultured mast cells of claim 51 in which the cytokine is IL-6 and the mast cells are mucosal mast cells.

53. (New) The population of cultured mast cells of claim 52 in which the IL-6 is human IL-6.

54. (New) The population of cultured mast cells of claim 51 in which the cytokine is IL-4 and the mast cells are connective tissue-type mast cells.

55. (New) The population of cultured mast cells of claim 54 in which the IL-4 is human IL-4.

56. (New) The population of cultured mast cells of claim 51 in which the flt-3 ligand is human flt-3 ligand.

57. (New) The population of cultured mast cells of claim 51 in which the stem cell factor is human stem cell factor.

58. (New) The population of cultured mast cells of claim 51 in which the mast cells are human mast cells.

59. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10^7 cells.

60. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10^8 cells.

61. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10^9 cells.

62. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10^{10} cells.

63. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10^{11} cells.

64. (New) A substantially pure population of cultured mast cells.

65. (New) The population of cultured mast cells of claim 64 which are human mast cells.

66. (New) The population of cultured mast cells of claim 64 which comprises at least about 10^7 cells.

67. (New) A method of identifying an agent capable of producing an altered phenotype in a mast cell, comprising:

a) contacting the population of cultured mast cells of any one of claims 51 to 63 with at least one candidate bioactive agent; and

b) determining whether a cell within the population of mast cells has an altered

phenotype.

68. (New) The method according to claim 67 in which the altered phenotype is a decrease in degranulation of at least one cell of the mast cells.

69. (New) The method according to claim 67, further comprising isolating the candidate bioactive agent that causes the altered phenotype.

70. (New) The method according to claim 67 in which the candidate bioactive agent is a small molecule candidate bioactive agent.

71. (New) The method according to claim 67 in which the candidate bioactive agent is a peptide and the contacting is done by introducing a nucleic acid encoding the peptide into the mast cells.

72. (New) The method according to claim 71 in which the nucleic acid comprises cDNA sequence.

73. (New) The method according to claim 71 in which the nucleic acid comprises gDNA sequence.

74. (New) The method according to claim 71 in which the nucleic acid comprises mRNA sequence.

75. (New) The method according to claim 71 in which the peptide comprises a random peptide.

76. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^7 cells.

77. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^8 cells.

78. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^9 cells.

79. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^{10} cells.

80. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^{11} cells.